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1603

To: F. L. Steahly

Date: July 13, 1951

From: W. K. Eister

Subject: Status of ORNL Radiochemical
Liquid Waste Processing,
Storage, and Disposal Program,
Minutes of Meeting Held on
July 5, 1951.

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pages

No. 27 of 31 copies, Series A

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Introduction

Recently it was indicated by the Operations Division that the storage tanks for the radiochemical waste were nearly full. A review of this situation in 1948 indicated that, by the installation of an evaporator, there would be sufficient capacity to allow the tank farm to operate until 1956 to 1958 without the construction of additional tankage.

Since that time, the program of the ORNL Metal Recovery Plant has been altered so as to delay the emptying of the metal waste tanks, one of which was to be available for radiochemical waste about the middle of 1951. Also, accumulation rate of radiochemical waste has significantly increased. Therefore, several of the laboratory personnel concerned with and affected by the radiochemical waste tank farm operation met to discuss this situation.

Summary and Results

It was reported that, on the basis of the present operating procedure, that the tankage available for radiochemical waste would be completely full about December, 1951.

Due to the short time available before the storage tanks would be full, only three solutions to this problem were apparent:

- (1) Transfer the contents of one of the tanks to an open pond.
- (2) Increase the rate of activity discharged to White Oak Dam.
- (3) Decrease the rate of waste accumulation.

All other solutions to the problem such as drying, crystallization, or scavenge type precipitation could not be accomplished before the middle of 1952. This was due to the required time for development, design, procurement, and construction.

It was recommended by K. Z. Morgan that a settling pond for this waste be considered at the new burial ground. This is located on the south side of the first ridge southeast of X-10. This pond could then be used to evaluate the radioactivity seepage through the shale-type formation in that area. A geological survey had previously indicated that this would be a satisfactory area for underground burial of hot wastes.

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Also, this pond would be sufficiently removed from X-10 and the new reactor site so that air contamination should not be a problem.

All seepage from this pond would be expected to enter White Oak Dam and, therefore, contamination of the underground water table would not be probable.

It was agreed that M. E. Ramsey, Operations Division Director, would proceed with the following program:

- (1) Determine the volume and composition of the waste to be transferred to the pond. It was estimated to be on the order of 100,000 gallons and to contain about 100 curies of beta and gamma activity.
- (2) Discuss the proposed site with Dr. P. Stockdale, Geologist from the University of Tennessee, who made the geological survey of this area.
- (3) Establish, with the assistance of R. J. Morton, Health Physics Division, the proper construction for the new settling pond.
- (4) Establish, with the assistance of F. L. Culler, Chemical Technology Division, the method of transfer of the wastes from the tank farm to the new settling pond.

After this information has been obtained, a meeting of the responsible ORNL personnel will be held to review the progress of the program. This next meeting is tentatively scheduled for Wednesday, August 1, 1951, at 10:00 A.M. in the Chemistry Conference room.

The Chemical Technology Division has agreed with the co-operation of the other ORNL divisions to make a survey of the radiochemical waste system to establish the sources of the 250,000 gallons now discharged to this system.

Conclusion:

It is recognized that the above program is a temporary expedient, and that a more satisfactory long range waste disposal program for ORNL should be developed. This is now to be considered by the Chemical Technology Division with the co-operation of the Health Physics and Operations Divisions.

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